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GEORGIA GAME

and FISH

UNIVERSITY OF GEORGIA
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FISHING EDITION
1955

COVER PAGES

FRONT COVER:

Fishing shot from Lake Black-shear — one of Georgia's beautiful lakes and rates among the best for Bass and Bream.

BACK COVER:

Tallulah River, one of the finest trout streams in North Georgia, is favorite among fishermen of all ages.

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Game and Fish Commission Progress

By FULTON LOVELL, Director

AS a report to the people of the State, we feel it the duty of the Department to not only point out the progress that we have made in restoring fishing over the State, but also to let you know of those things which experience and research points out as necessary to bring about even better fishing not only for those who are fishing today, but the hundreds of new anglers who are turning to fishing each year.



FULTON LOVELL
Director, Game and Fish Commission

During the past few years, this Department has had various types of research projects activated, and from some of those projects, we know that we are already reaping the harvest from others. It brings to the surface needed cooperation in helping to educate the public to the necessity of coping with problems that will ultimately improve fishing.

Not only has the Game and Fish Department introduced new types of fish in various public streams and lakes over the State, which has improved fishing, but also the Enforcement Division has been put on a more efficient basis by the closer selection of Wildlife Rangers, additional training, increased pay scale, the furnishing of trucks for conveyance of equipment, and the use of radios.

We now know that we must have the cooperation of our courts in order for us to be more efficient in enforcing the game laws, and it is a disheartening chore for a Wildlife Ranger to spend hours in apprehending a violator only to have the courts make a mockery of his endeavors by either out-right releasing the guilty party or placing such a small fine or sentence upon him that it only encourages others. We know that we must have the cooperation of the courts, because it does no good to restock and bring about a better balance of game and fish in our fields and streams only to have it exploited by a few violators.

Our research projects have proven to all that our lakes and streams are bound in rough fish to the extent that possibly 90% of the fish population of the entire state is of a variety that is not sought by the average fisherman who expects to be able to take home with him the type fish that will not only give him pleasure while taking them, but help feed his family.

We know that in Allatoona Lake, which has a total acreage of 10,500 acres, that there are approximately 395 tons of rough fish. In Lake Chatuge in Towns County there are approximately 52 tons; in the Savannah River, 2,168 tons; in the Satilla River, 103 tons; in the Altamaha River, 1,452 tons, and so on over the State.

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GEORGIA GAME AND FISH

Fishing Edition

Bill Cornelison, Editor

Bill Atkinson, Assistant Editor

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THE TRUE MEANING

By EARL DELOACH

PEOPLE who go fishing solely to catch fish are missing something that can be, and often is, vital to their physical and mental welfare. They are missing the true meaning of the spirit of fishing.

Fishing is not only good sport, it is good medicine, especially in these days of hurry and tension. If fish are biting and a good catch is made, well and good. The fisherman reaps the double reward of the sport and enjoying the fish when he gets home. But if no fish are caught, what's the worry? We can still get outdoors, maybe cogitate a little, and find relaxation.

Not too long ago I fell victim to a conglomeration of aches and pains in the neck, back and chest. The chest pain made me think of heart trouble, so I went to see my doctor. He examined

Mr. and Mrs. M. N. Watkins of Conton, poss the time of day with Mr. and Mrs. M. Cul-len of Atlanto. These couples found the true meaning years ago.



Dr. B. B. Groy prescribes a little fishing and relaxation for himself.

me and gave me about the nicest prescription I've ever had. He said "go fishing."

I didn't need any other advice, but he explained anyway, that I needed relaxation, and said there's no better place to find it than on or around water.

Acting on his "prescription" I took the boat to the Clark Hill reservoir. Hurrying in spite of myself because of the tension, I put the boat in at the Elijah Clark State park near Lincolnton and went to Elam's Soap Creek camp for lunch. Then I

just rode around the lake above the park.

Finally I concluded that the noise of the motor was, maybe, keeping me from hearing other things that I'd like better, so I cut it off and let the boat drift, while I leaned back against a cushion. The late afternoon sun was coloring the sky, the ripples were lapping lazily against the sides of the boat, and several herons flying somewhere to roost were silhouetted against the sky.

I didn't even want to fish. Catching a fish would have been a disturbing note in the midst of all that serenity. Then I was sound asleep for at least 15 minutes. It was more refreshing than all the sleep I had the night before. All of my tensions vanished. I went home, ate an enormous supper and went to sleep again. Doc's prescription had worked, and I had found again the true meaning of the spirit of fishing.

Biblical Background

Whether the doctor thought of it or not, he had some good Biblical background for his "prescription."

After the crucifixion, the disciples who had followed and worshipped the Master for so long, were awaiting the promised resurrection. So far as they

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BEAVERS —

Old Mother Nature's Engineers

THE American Beaver played the greatest role in the settlement of North America than did any other wild animal. The Hudson Bay Company was formed for the trading and buying of the beaver pelts in the North, and as the beaver population was trapped down the trappers moved further westward and when a large number of beavers were found these trappers would settle down and a small settlement would grow and from these some of our largest cities have grown.

Here in Georgia we have only one sub species of beaver known as the Carolina Beaver. At one time this beaver was nearly extinct here in the state and they were placed on the protective list. Wherever a large colony was found, several beaver were trapped out by the State Trapper and carried to some other section of the state that had desirable conditions for beaver and here they were released. If anyone has land that has the suitable habitat for beaver it is



possible to get beaver for re-leasing on this property.

On the government refuge between Monticello, Ga., and Grey, Ga., a colony of beaver have set up and have built quite a few ponds here. It is estimated that there are between twenty to thirty beaver in this colony which is considered one of the largest colonies in the state.

Their dam is a structure that would make the engineers sit back and scratch their heads, trying to figure out how these animals picked exactly the right spot on the stream to construct this dam, so as to keep a consistent water level which is a must

to the beavers to start a colony. The dam is several yards wide and several yards thick at the base and tapers to a few feet at the top of the dam. It is constructed of large logs for the base work which the beavers float down and anchor, and then twigs and sapling are brought in their mouths and intertwined to form the major portion of the dam. After this framework has been set up they bring mud and stones in their forepaws to the structure and this is patted into place with their broad tails.

Another question which our human engineers have tried to figure out is just how these beaver can build a dam to flood just the right amount of land that they will need. In this one particular area on the Ocmulgee River the beaver have flooded fifty to a hundred acres and there are remains of several dams that have been abandoned either because of the low water or siltation in the ponds or some reason known only to them. Some of these dams are several hundred yards long.

Below the new dams the beavers have constructed what we call check dams. These check dams are used in case the larger dams break or the rainfall causes too much water to flood the area. These dams are smaller than the larger ones but are

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THE BEAVER. (1)—His home. (2)—His workshop. (3 & 4)—His early morning swim and his own homemode pool. (5)—Construction of the dom shows the engineering obility of the Beaver. (6)—So now he decides to go out of the water and reolly go to work. (7)—And he reolly does some big jobs. (8)—Bill Atkinson shows the size of some of the trees the Beaver will tockle.



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SHRIMP BOATS ARE A-COMING

(1)—This is a typical Shrimp Boat. There are hundreds of these along the Coast of Georgia. (2)—This shows the way the Shrimp Boats are out before the drag for Shrimp is started. (3)—The drag is finished. Let's bring her in and see what we have caught. (4)—Well, she sure caught a mess that time. (5)—You are asking yourself now "Where are the Shrimp" You must take the Editor's word there are some Shrimp in this mess.



SHAD FISH ON THE G.A. COAST

(1)—These two Shad Fishermen show a real fine haul. (2)—Shad fishing is hard work as you can see with the hundreds of feet of net to get untangled. (3)—The work isn't over even when the fish are caught. There still remains the job of taking them from the nets. (4)—Some of the Shad Fishermen seldom leave the River during the season. Many live in houseboats such as these. (5)—But at \$2.00 per fish, maybe it isn't so bad after all — huh!!



Woe be the Life of a RANGER

South Dakota Conservation
Digest

A wildlife ranger's lot is not an easy one. He is one of those unfortunate persons who is severely criticized "if he does" and similarly criticized "if he does not." In our society today, we have far too many people who firmly believe that game and fish laws and regulations should be enforced to the "nth" degree—except when those laws or regulations interfere directly with themselves, their relatives or their close friends.

During the past fishing season we had approximately 750,000 fishermen in Georgia lakes and streams. Naturally, our wardens were not able to contact each of these fishermen but they did contact a fairly large percentage of them throughout the fishing season.

Checking fishing licenses is but a small portion of the ranger's daily routine. He is equally curious about where you are from, is this the first time you fished in this locality? Did you see a lot of fishermen? Where did you fish? Did you get your daily limit? It may appear to you that he is getting rather nosey, but to the ranger these questions are important in determining fishing population trends in certain sections of his territory. The wildlife ranger also must be able to answer a multitude of questions which seemingly "stack up" to await the presence of the uniformed "man in green." Then at an hour when sensible people are home in bed, the telephone at the ranger's residence suddenly becomes busy with conversation

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Shown here are some scenes in the typical day of a Wildlife Ranger. (1)—Rangers R. S. Beasley and E. Lee remove illegal fish traps from the Savannah River. (2)—Ranger Jim Riden discusses with Mr. Sauce Gardner, of Madison, Georgia, the effect planting Amber Cain will have on the quail in that section (3)—District Chief Thomasson and Ranger Pitts shown patrolling on a lake. (4)—Even while having their morning coffee Ranger Jim Riden and Frank Thornton discuss Game and Fish rules and regulations with Senator Roy Lambert, of Madison. (5)—Ranger A. B. Elrod shown checking licenses and giving information to fishermen on Nottely Lake. (6)—Ranger Howard Whitner shown checking fishing licenses and explaining fishing laws to a young citizen of Murray County.

SAFETY ON THE WATER

IN spite of the early date, we have already had some tragic water accidents this year in Georgia. With more and more people turning to outdoor recreation, water safety is becoming of prime importance to everyone.

Knowing how to swim is probably the best equipment one can have for water safety. Unfortunately many adult Georgians have never had the opportunity to learn to swim.

Most of us learn to swim when we are youngsters. If we don't learn then, we usually go through life without having this simple ability. Today's youngsters usually have a chance to learn how to swim.

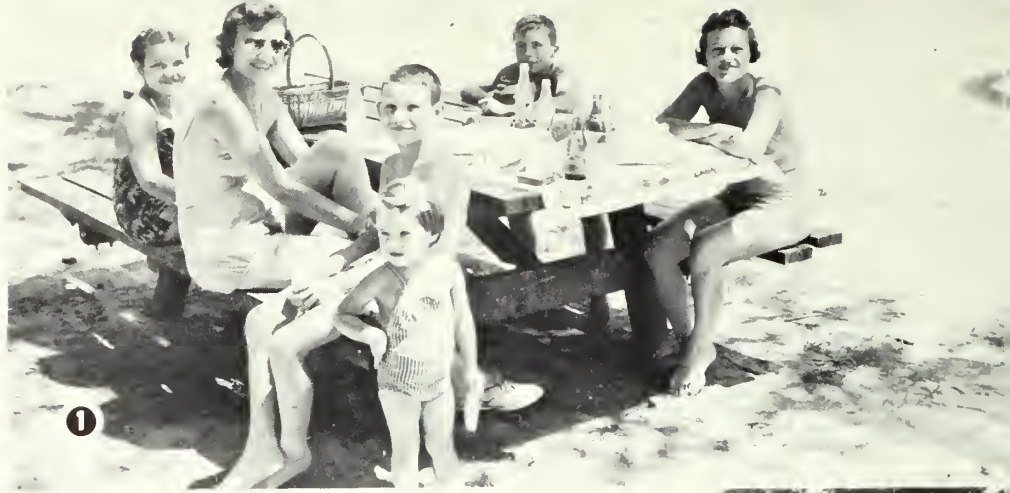
Back in the days when Dad was a lad, there just weren't many places where he could go swimming except in rivers and creeks. Today, with the many reservoirs and city and school swimming pools, almost every Georgia youngster has a place to go swimming.

They also have the chance to learn how to swim from qualified instructors, thanks to the YMCA, YWCA, Boy and Girl Scouts and other youth organizations. Many schools offer swimming instruction in their physical education courses.

Much of our Georgia water does not have supervised beaches. The Georgia Game and Fish Commission does not recommend swimming at unsupervised beaches at any of its recreation areas.

If you can't swim, it's time to learn how, from a qualified instructor. If you can swim, a good safety precaution is the Buddy System used in many youth

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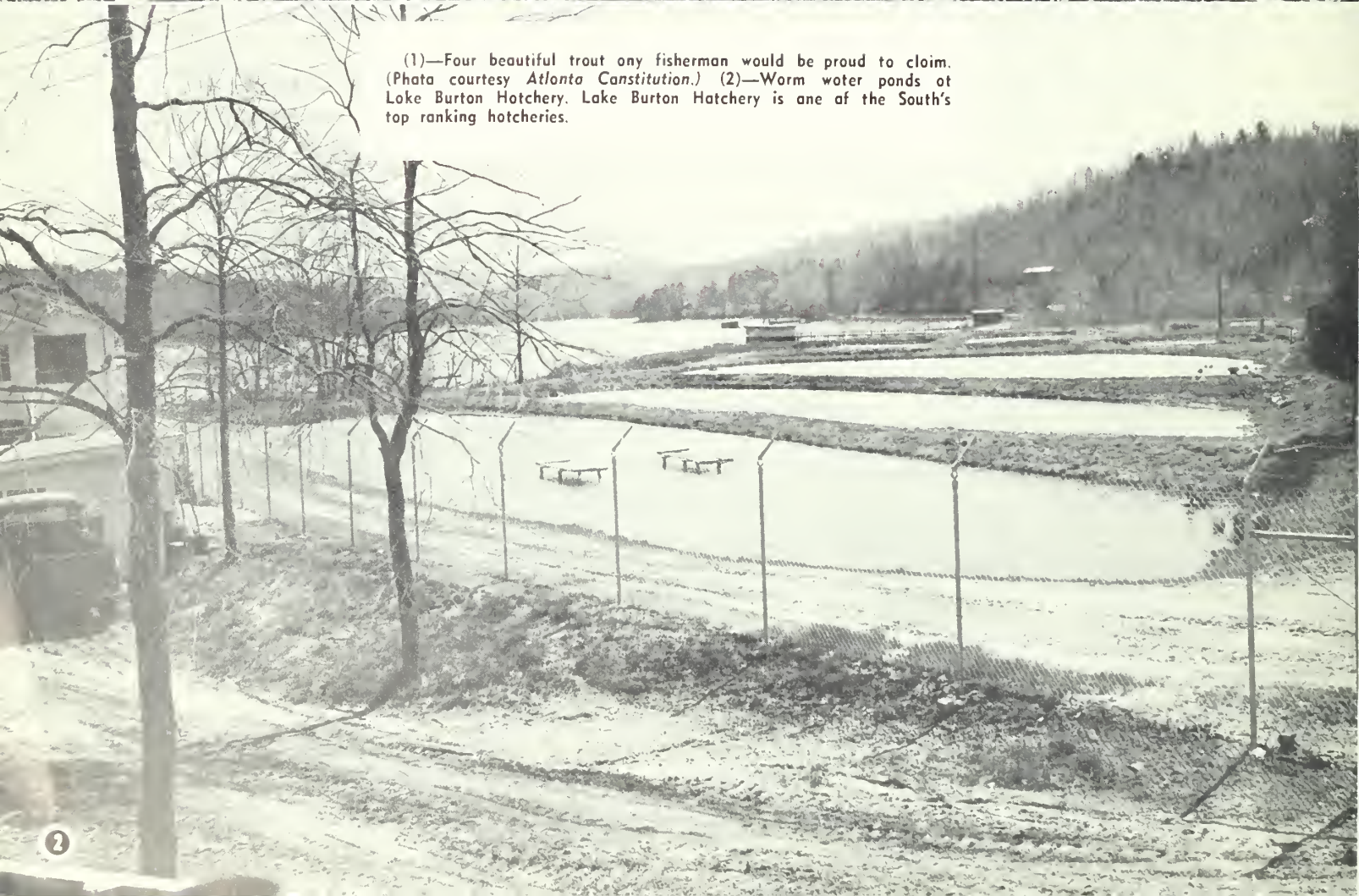
(1)—These housewives from Marietta are treating their children to a picnic at Acworth Beach. (2)—Many supervised beaches such as this are available throughout Georgia to the public. (3)—All are under the watchful eyes of a fully-qualified lifeguard at all times.

This is one of the magnificent scenes you
will see while trout fishing in north Georgia.





(1)—Four beautiful trout any fisherman would be proud to claim.
 (Photo courtesy Atlanta Constitution.) (2)—Warm water ponds of
 Lake Burton Hatchery. Lake Burton Hatchery is one of the South's
 top ranking hatcheries.



Fish Stocking

THERE'S one basic fact that needs to be understood if you are to properly determine the role of stocking fish. Fish are prolific—much more prolific than most animals we deal with.

We can't give accurate figures on egg production because a big female lays far more eggs than a small female of the same species. However, in general, a trout may lay 1,000 eggs, a bass 10,000, a bluegill 20,000, a walleye 50,000, and a big carp might lay a million. Under suitable conditions, a big percentage of these eggs hatch. One study on a 14-acre lake showed that the number of fry produced naturally by four species (largemouth bass, bluegill, common sunfish, rock bass) was slightly over 500,000 per acre. The water would support only a few hundred adult fish per acre.

We have had instances where the limited brood stock present in the original river was more than adequate to provide all the young fish needed to stock big impoundments.

A big female bass in a one-acre farm pond could produce enough progeny so that, if all eggs hatched and all fish survived for three generations, there would be enough fish, at one pound each, to replace the water in the pond, and to make a heap, one acre in area, extending over 700 feet above the pond!

Obviously, fish are prolific. We can understand the picture if we will think of cows each having thousands of calves each year. If each cow had only 10,000 calves, adding a truck load of calves wouldn't increase the cattle population of a pasture very appreciably.

There's an added item. Fish need food—lots of it. Their food chains tend to be long. The average acre of water in the United

States probably supports only about a hundred pounds per acre. This may range all the way from a very few pounds in some waters to a thousand pounds or more in some small highly productive waters.

It's easy to see why, during the days of the hatchery "craze," many of our hopes were unrealized. We can understand, now, why much of the stocking was ineffective or even harmful. During those days the public was quite willing to accept the belief that stocking was the panacea to all our fishing ills. We fishery workers believed it, too, and advocated it. The job of selling the stocking idea was an effective one. It was later that we learned more about fish being prolific and about the food needs.

The job of "unselling" has not been an easy one. For instance, a year or two ago we talked with a farmer about his farm pond. He had decided to start fishing it but then he observed an immense crop of bluegill fry — "millions of 'em." "We decided to wait until they grow up before starting the fishing," said the farmer. The man had a well-managed farm. He had only a limited number of cows in his pasture. He understood about carrying capacity and overgrazing on the land. But to him the farm pond was quite different.

There's the case, too, of sportsmen being delighted when a federal truck delivered bass fry for distribution in the rather extensive bass waters of one county. The supply consisted of 5,000 fry, less than half the potential output of one female!

Though there are still exceptions, more and more sportsmen recognize the fact that stocking has limitations. In general, the public still looks on stocking as a cure-all only in those states where the top fishery people

(some ex-hatchery men or politicians) have been disinterested in public enlightenment, for obvious reasons.

Stocking does have major limitations. But it's one of our important fish conservation tools. Properly used, stocking plays an important role in improving our fishing.

Warmwater Fish

For warm waters we must rely on planting small fish. Raising game fish to adult size in hatcheries costs a fortune. Rearing a bass to twelve inches would cost an estimated two to four dollars. Not over half the planted fish can be expected to be recaptured. This raises the average price of each bass creel to four to eight dollars—more than the average price of a fishing license. So far as we know, only one state still carries on this expensive practice.

Planting warmwater fingerlings serves a good purpose in a number of instances:

1. To stock new waters, especially farm ponds and new public fishing lakes.

2. Reintroduction of fish in lakes depleted by winterkill.

3. Introducing species not already present, where such introduction is desirable.

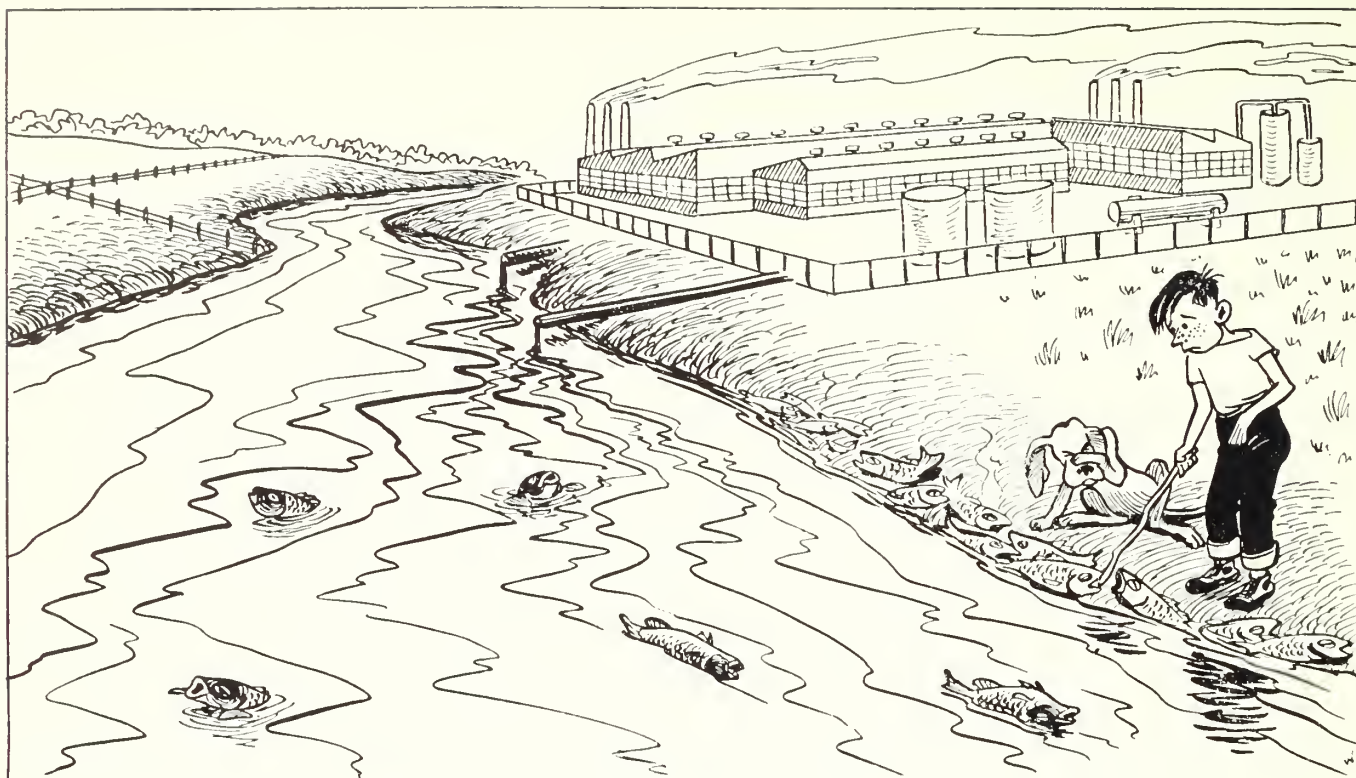
4. Restocking of waters from which existing fish populations were removed through use of chemicals or by draining.

5. In some instances stocking will help fishing in waters where the fish are already present, but where conditions for spawning are inadequate. For example, Minnesota has been able to provide walleye fishing in some kinds of waters by stocking them heavily with walleye fingerlings. The situations where stocking of this kind is helpful seem to be rather limited; the need for the stocking should be determined by the professional fishery worker.

Coldwater Fish

The stocking picture for warmwater fish and coldwater fish differs rather decidedly. Trout can be raised to catchable size at a much lower cost than would be needed to raise bass or

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INDUSTRIAL POLLUTION AND FISHING

DOMESTIC sewage has ruined many a fishing stream. But, industrial pollution has done even more damage. In the last fifty years there has been a seven-fold increase in industrial production. This big increase has added tremendous volumes of industrial wastes to our streams.

In the United States, more than 10,000 separate plants are discharging these wastes—food processing, meat packing, textile manufacturing, pulp and paper mills, synthetic fibers, rubber manufacturing, steel, oil and petroleum products, metal finishing, coal washing, and many others.

About 6,000 of these plants discharge wastes which decompose in the same way that city

sewage does. And, as with city sewage, the decay removes oxygen from the water, making it unsuitable for fish and fish food. The discharge from these 6,000 plants is equal to the pollution effect from the sewage of about 110,000,000 people. In other words, these 6,000 plants do nearly twice as much harm, pollution-wise, as is done by the 8,000 communities, with a population of 60 million, which discharge raw or inadequately treated sewage into our waters.

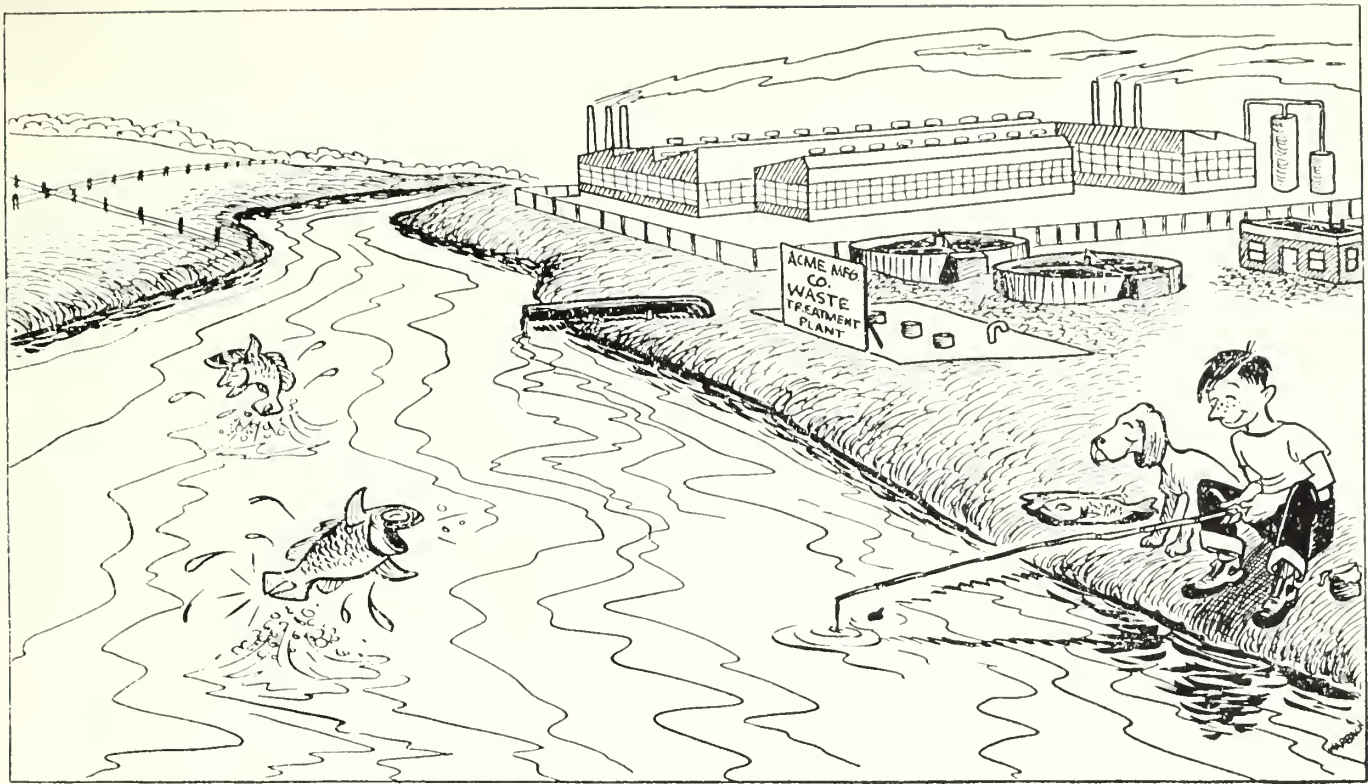
In addition to those mentioned above, about 5,000 plants discharge additional inorganic or undetermined types of wastes. Too, about 10,000 tons of acid are draining into the waters each day from mines.

The acids and chemical wastes are responsible for many of the big fish kills which we read about. They are toxic to fish and to the organisms on which the fish feed.

Certain insecticides used on cotton and other plants wash into streams and kill fish and fish foods.

Many polluting industries are spending considerable sums of money to find out how they can prevent polluting the waters. On the other hand, some polluters don't seem to care what happens to the wastes discharged by their plants. Because of the latter, we need strong pollution laws, rigidly enforced.

Industrial organic waste can be treated in much the same way that sewage is, if given primary and secondary treatment by



cities with modern sewage treatment plants.

Many industries are learning, too, that much of the material which they have discharged into streams can be converted into valuable by-products. For example, distillery wastes are now used for cattle feeds, and some paper mill wastes are used as road binder. Some of the industries which discharge acids or other toxic wastes can treat them to make them less harmful, or can keep the wastes from discharging to the stream. Some can find valuable uses for these toxic materials.

We must have industrial production, and must maintain and expand it, if we are to keep our position of leadership in the modern world and maintain our standard of living. But, we can have both large-scale production and clean waters if we really want both.

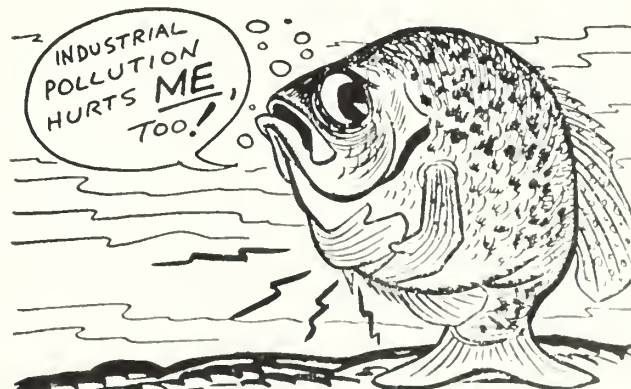
You can help prevent pollution by insisting on good antipollution laws and by calling attention

to the polluters; also, by urging the polluters to find ways of discontinuing their destruction of fishing, swimming, and other aquatic sports. An enlightened and determined public can stop most pollution.

If you plan to take a vacation trip, check first to see if the waters you intend to enjoy are unpolluted. The state water control agencies and the U. S. Public Health Service now have the results of an over-all survey showing where pollution exists. If the waters you had hoped to visit

are polluted, take your vacation elsewhere. But, be sure to indicate to the Chamber of Commerce or tourist bureau why you chose to go elsewhere rather than to its community. The tourist business has become an immense industry. If tourists visited only areas with unpolluted waters, and indicated why they did so, many of our local pollution problems would soon be corrected.

Remember—pollution is a major destroyer of our favorite sport.





(1)—One of the large Crappies taken from Jackson Lake. (2)—This young man from Rabun County displays a string of trout that would make experienced anglers in Georgia envy his fishing ability. (3)—Like father, like daughter, this pretty little miss is the daughter of Tommy Shaw, manager of Sportsman's Landing, of Clark Hill, and apparently she knows how and where to get those big ones. (4)—Grant Dickerson receives congratulations from Governor Marvin Griffin on being named outstanding young American from Georgia.

Hey!

DON'T THROW THOSE PAN FISH BACK

YOU don't have to be loaded with money to spend in stocking fish in your favorite waters—or knock yourself out working to improve the habitat in a stream or pond—just to be a conservationist. YOU can be a conservationist while enjoying your fishing—just by keeping all the pan fish you catch, no matter whether they're king-size or bait-size!

It wasn't long ago that we had limits of the size of pan fish we could keep and the limits on the pan fish were very few. We used to think that to protect our future fishing we should take fish only if they were a certain size, and we should take only a very few. We know better now, and regulations on size of pan fish to be kept have been tossed over the side of the boat and the legal limit on the number of pan fish has been raised considerably.

Why this apparent about-face? To begin with, regulations

The size of bream is considerably reduced as the bream population in a pond increases.



Sara Godfrey, of Smyrna, Georgia, displays a nice string of bream.

were often made more or less arbitrarily. It seemed that fish had to be protected during the spawning season, and that they should not be taken until they were big enough to spawn. With these two ideas uppermost, blanket regulations were often dreamed up without regard to a lot of other factors.

One factor seldom considered was that a body of water will support just so many pounds of fish. Let's assume that the average pond in Georgia will produce 100 pounds of fish per acre of

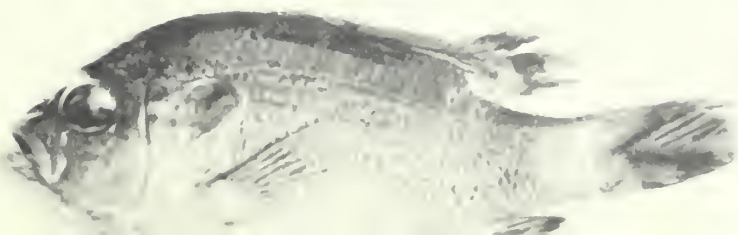
water. That hundred pounds per acre can be made up of 1,000 small fish or 100 larger fish. It can consist of any ratio of game fish to pan fish—and usually the pan fish outnumber the game fish more than enough for proper balance.

If the predators (game fish) are fished heavily, they aren't able to control the underfished forage (pan) fish. The very prolific pan fish compete with each other for available food. Without proper food, many pan fish mature long before they are of attractive size—in fact they often die of old age before getting big enough to attract a cat!

Another item that enters into the picture is the fact that, in over-crowded conditions, pan fish help to keep down the numbers of game fish. Some pan fish are egg eaters, most of them compete directly with young game fish for available food, and when they are very numerous they can do a terrific job of limiting the survival of game fishes. Thus, greater fishing pressure on the game fish plus competition from the pan fish, coupled with limited fishing for the latter, adds up to an unbalanced condition—too many pan fish and too few game fish!

The State Game and Fish Commission is doing pan fish

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Polluted waters in the Altamaha River caused this very large fish kill.

POLLUTION

Georgia's Sixty-four Dollar Question

ONE of the most reassuring movements of our times is the awakened interest in pollution of our streams in Georgia. Let's not deceive ourselves that this interest is prompted by generous or academic impulses, but is being forced on us from sheer necessity.

Reports show that for the past several years there has been a steady increase of pollution reported in the state. Whether this has been going on and the people are just waking up to the fact or whether the reports are all new cases doesn't matter, the thing that does matter is that it is going on and it is up to the people of Georgia to try and correct the great damage that is being done to the once beautiful streams in our state.

If a map of our state was marked where pollution had occurred in the past twenty years there would be little space left in which a man could read where he was going. One of the biggest pollution that has occurred in the past five years happened only a few months ago on the Altamaha River. For a thirty mile run of the river all types of fish were killed from a slip by someone. After an investigation cor-

rective measures were taken and at a very small cost the goodwill of the people was regained. If this small cost had been spent at the start this would never have happened and there would never have been the fear of happening again. It did and there will always be someone that will remember when "that plant ruined the fishing in 1954."

Our great state is growing and to grow we must have industries. With industries there comes a certain amount of pollution. We welcome these new industries and the local people know that it will mean a bigger income to them, but we feel as though we can speak for all the sportsmen in the state when we ask that industry respect our streams by including in their initial layout money for disposal units.

Last year during the drought it was very seldom that a day went by that a case of pollution wasn't reported. Low water showed us many sources of pollution that had been going on for years that otherwise would have continued to kill our fish had it not been for the small amount of water that wasn't able to break down the amount

of pollution.

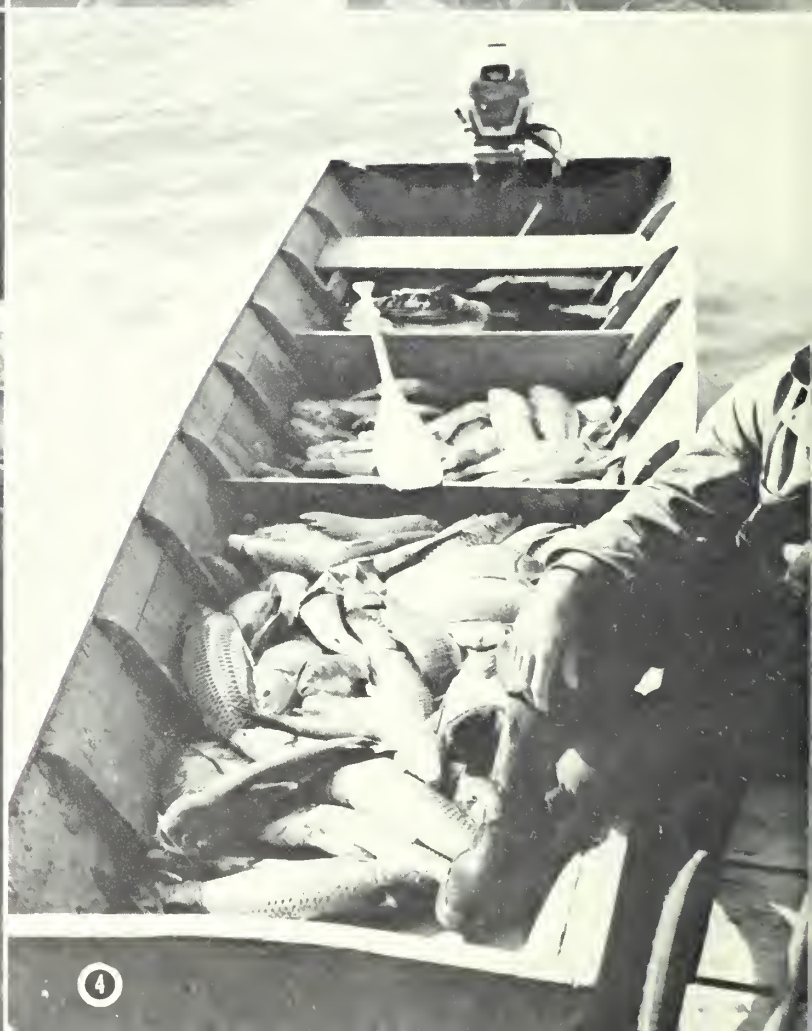
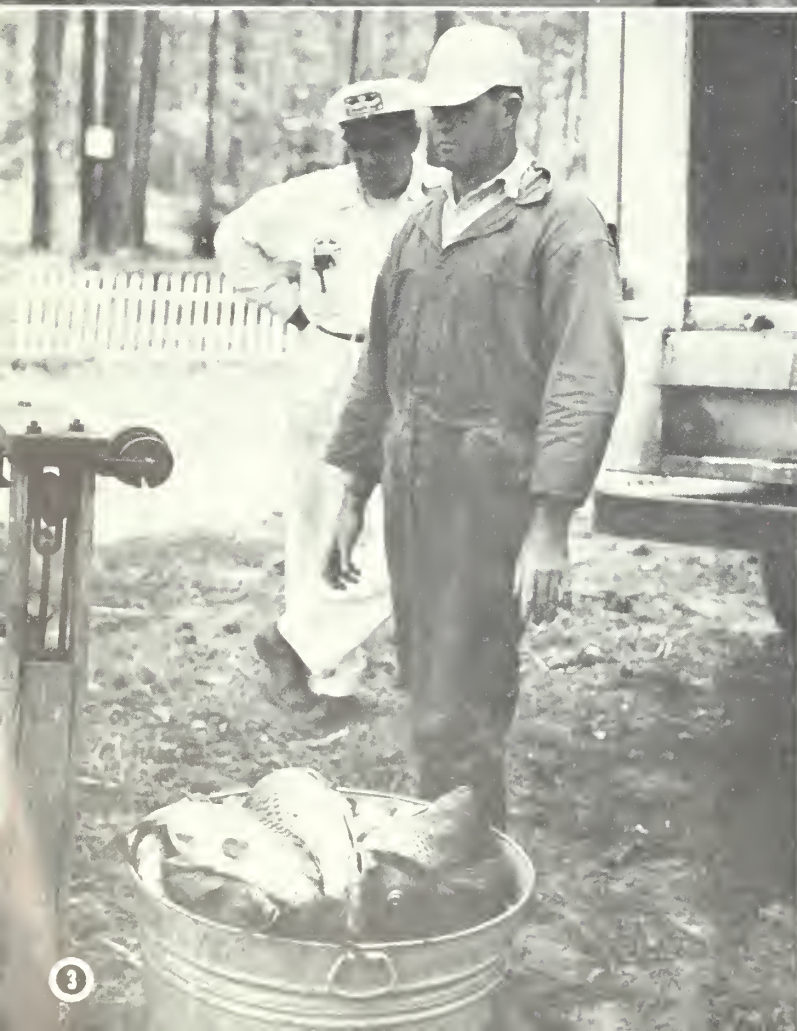
One of the chief causes of pollution in Georgia is the open sewerage systems used by some of our larger cities. The cities have outgrown their facilities and therefore much of the raw sewerage is being run into our streams with the full knowledge of the people. How can we expect good fishing when this practice goes on and nothing is ever said or done about it?

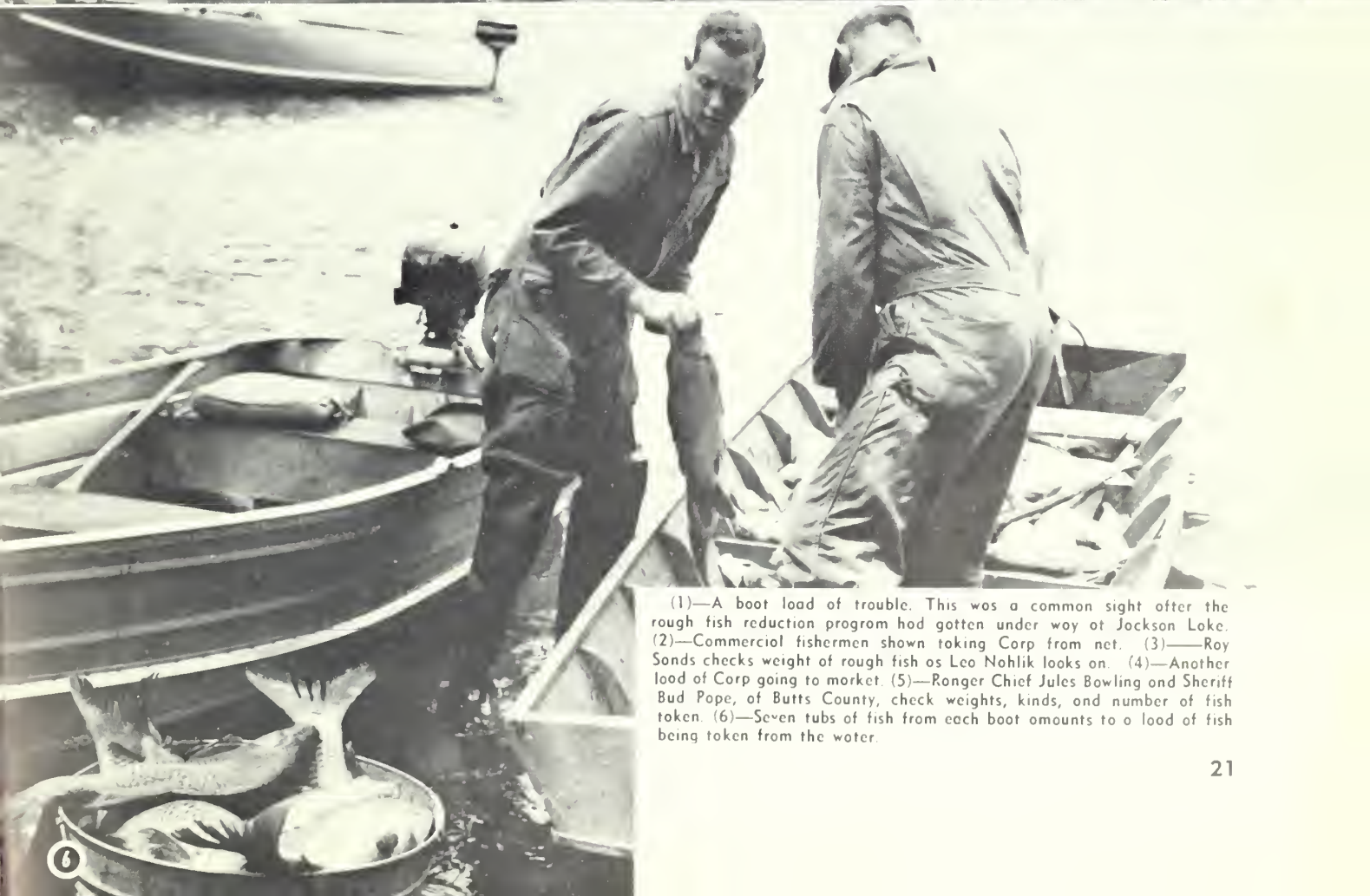
One case of pollution occurred right after the H-bomb plant was started and the word spread that all of the fish in the stream were radio active. Fishing went to the dogs until it was told that the government had checked and double checked and the small amount of radio active material that did get into the river could not affect the streams. As the government is checking these things many of the new industries in the state have their own technicians to check their waste matter. So—if we could get the old industries to adopt these same methods as the new industries we would have one part of our pollution problem stopped.

Our forestry program is a great help in clearing up our streams because with the trees that are planted the root systems are holding back land that otherwise would have brought more siltation into our already muddy streams.

What can we do about this problem? We can all contact our Senators and Representatives and ask that a pollution law be passed that has enough to it to put a stop to our damaging the streams of Georgia.







(1)—A boot load of trouble. This was a common sight after the rough fish reduction program had gotten under way at Jackson Lake. (2)—Commercial fishermen shown taking Corp from net. (3)—Roy Sonds checks weight of rough fish as Leo Nohlik looks on. (4)—Another load of Corp going to market. (5)—Ranger Chief Jules Bowling and Sheriff Bud Pope, of Butts County, check weights, kinds, and number of fish token. (6)—Seven tubs of fish from each boat amounts to a load of fish being taken from the water.

Life of a Ranger

(Continued from Page 8)

ranging from the ridiculous to the sublime. The diehard sportsman, interrupting his poker game, asks, "Where's the best place to fish tomorrow?" or the antagonist remarks, "What's the bounty on game wardens this year?" or better still, "My boy is having a party, can you tell me what games he should play?" An individual will want to buy a license at three o'clock in the morning, yet wildlife rangers haven't sold licenses for a considerable number of years. Yes, it sounds foolish, doesn't it? But such questions are asked during all hours of the day or night. You don't believe it?—then ask a ranger's wife!

Quite contrary to the belief of many, wildlife rangers are human beings with feelings and emotions, much the same as any hunter in the field. On an average the ranger commences his day in much the same manner as anyone else — the school teacher, the dentist or the businessman. But during his early morning patrolling he encounters a violation. He apprehends the party and betwixt questions and answers the unlawful gets a loose tongue and highlights his speech with descriptive words not commonly found in the modern day dictionary. Suppressing his feelings the ranger tries to explain the position of the Department or the circumstances behind the arrest. Amidst sarcasm and slander the ranger holds his ground, but his patience has been pushed to the hilt and his remarks become sharp and concise. I'm wondering if perhaps you too—yes, you Mr. Sportsman, and you Mr. Businessman, don't you have similar days, similar experiences in your business?

All that is asked is that you do not condemn the ranger for those days he is ill at ease. Withhold your judgment until you see him in action again. Snap judgments of a person's character are unfair, depict a shallow mind and certainly aren't sportsman-

like. Anyone who enforces our laws is behind the proverbial "eight ball." Place yourself in the ranger's shoes. Do you think you could work the entire fishing season without hurting at least someone's feelings? Or without being publicly criticized or rebuked for actions you may or may not have taken? I sincerely doubt it very much. It would almost seem that there is always someone who wants to make the work of the ranger more difficult, someone who wants to belittle him in front of people, but thank the Lord those people are in the minority.

Besides checking this vast army of anglers for licenses, the ranger must also supervise the removal of rough fish from contract waters by commercial seiners. He must inspect boating concessions to see that they abide by safety measures prescribed by the Commission. They assist the Fisheries Division in the salvage of distressed fish and in the stocking of new fish in lakes and streams with their territories.

A wildlife ranger's public relations work goes on incessantly. Aside from his field work, yet on the adult level, he appears before sportsmen's clubs, civic and service organizations. But foremost, his instructions and demonstrations are the entertainment and the lesson of students, 4-H'ers, Boy Scouts, Y.C.L.'ers and Future Farmers of America. Even when the ranger enters a cafe for a cup of coffee the conversation will generally center around the wildlife topic. If anyone has any complaints or questions concerning the seasons, the wildlife ranger is the man to whom they go for their answers, and rightfully so, for he has been designated to represent the Department in the field.

Ever since the turn of the century the wildlife ranger has been the public's conservation agent. Personally, I believe they have done a remarkably good job of protecting our game over a period of years. College trained research biologists, an outgrowth of the war years, have entered the wildlife picture. But regard-

less of how much research data we may have accumulated now, or regardless of how much we may need for the future, fact of the matter is that the Law Enforcement Division, the State wildlife rangers are still needed to enforce the game laws passed by our State Legislature, and the regulations as set forth by the Game and Fish Commission.

Wildlife rangers have come in contact with many wonderful people throughout the years. In their repertoire of memories many amusing incidents unfold, but too, their duty does not escape the bereaved moments of life. Occasionally the Department receives complimentary letters about our rangers, and editors of the state have publicly commended them for their service. We want you to become better acquainted with your wildlife ranger. Get to know his problems, meet his family and make him a part of your community. We have to have your support in order that we may do a good job. Remember, we can enforce the laws of Georgia only to the extent that the people of each city, town, village and hamlet want them enforced!

A state wildlife ranger is your best friend. Good luck afield.

LICENSE FEES

RESIDENT LICENSES:

State Combination Hunting & Fishing-----	\$ 3.25
State Fishing-----	1.25
State Hunting-----	2.25

NON-RESIDENT FISHING LICENSES:

Season Fishing-----	\$
3-Day Fishing-----	1.00
10-Day Fishing-----	3.25

NON-RESIDENT HUNTING LICENSES:

State Season Hunting-----	\$20.25
State 10-Day Hunting-----	10.25
County Season Hunt-----	10.25

SHAD FISHING — SEINERS & NETTERS

State Shad Fishing-----	\$ 1.00
State Seiners & Netters-----	1.25

Water Safety

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camps and endorsed by the State Game and Fish Commission.

Each swimmer pairs off with a partner and they keep track of each other. This simple technique makes help readily available to a swimmer as soon as he gets in trouble.

Even expert swimmers can get into trouble with cramps if they go in swimming when they are over-heated. We all know of the possibilities of getting cramps from going into the water soon after eating.

Swimming and diving in strange water can be treacherous. Underwater obstructions are a hazard that claims lives every summer.

Boating, even for non-swimmers, can be safe, if reasonable precautions are taken. Of course, you should have a life preserver along if you can't swim. There are many types of modern life preservers that are small, compact and easy to use.

On the larger waters, such as the reservoirs, even the boatman who knows how to swim, should use a life preserver. Boats on these waters should be well constructed and "seaworthy." Outboard motors should not be too powerful for the size boat you are using.

Experienced boatmen in the reservoir areas will advise you to head for shore at the first indication of a storm. These large waters can become very dangerous for small craft during storms.

Capsizing of small boats is a constant danger, unless you and your passengers use common sense. Never stand up in the boat. This is a well-known rule, but each year boats are overturned and lives are lost because of failure to heed this simple rule.

Plain common sense can erase all the danger from recreation on Georgia waters. You and your family can have many hours of fun and outdoor recreation if you follow this advice.

BEAVERS

Old Mother Nature's Engineers

(Continued from Page 4)

built just as strong.

After the water level was reached these beavers built several houses or lodges. Once more their engineering ingenuity was brought into play. The first step in the building of these lodges was to cut saplings and twigs which were brought out to the spot that had been picked for the lodge and were anchored to the bottom, and then were piled higher and higher into a dome-shaped pile until several feet of sticks were exposed above the water line. Each lodge has two tunnels into it for exits. One runs at a right angle and the other runs straight into chamber of lodge. The straight tunnel is used for bringing in pieces of limbs and twigs that are to be used as food. The inside of these lodges have a mud platform built several inches above the water line and these mud floors are covered with dried rushes and shavings from the limbs that they cut. The walls are plastered with mud up to a foot or two of the top. The dome-shaped top is not covered or plastered with mud but the twigs and limbs keep predators and the elements out, but there is a sufficient amount of air that filters in to meet the demand of the number of beavers using the lodge.

The beavers cut a supply of trees for their food during the winter and they take this supply out and anchor it underwater near the tunnel and when they get hungry they go out and get what is needed from this big supply.

It was noticed that after the kits came in May, the old male beaver left the lodge and set up bachelor quarters in a bank den, and left the feeding and raising of the young to the mother.

Often we hear that beavers have cleaned out a small pond of

Pan Fish

(Continued from Page 17)

control work in many ponds throughout the state. Biological surveys have shown that the fish populations in these waters are out of balance. It is better to remove some of the over-populated and stunted pan fish than it is to stock more fish and add to an already undesirable situation.

Direct control measures consist of netting, draining, or the use of chemicals to thin out fish populations. What works on one pond may not work on the next; sometimes a combination of these methods is used. Indirect control includes habitat (living area) improvement, concentrated stocking of predators, liberalization of regulations, and encouraging the fishing public to catch and keep more pan fish.

State Game and Fish Commission personnel are able to work on so few waters during the relatively short summer months that they need help from the fishing public. The fisherman who wants to help doesn't have to have any special equipment, either—his regular fishing gear will do. By keeping a larger number of pan fish, instead of throwing the medium-sized and little ones back, he can contribute to the betterment of his own fishing. He can pass the word along to others, and see that the youngsters learn early to keep 'em all. In short, without much extra effort he can be a conservationist!

fish but nothing could be further from the truth. Beavers are not flesh eaters but their diet is made up of barks, water plants and small twigs. When a beaver pond is found usually there is always good bream fishing. During the past winter many ducks used these ponds as resting spots, and some are still on these ponds where food is abundant. The beavers are not only the greatest engineers but also wonderful conservationists.

Fish Stocking

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other game fish to a size where they would be attractive to anglers.

In numerous waters we can now have good trout fishing only by planting catchable-size fish. The cost is high. A single legal limit costs more than the price of a license. But, such stocking is justified if the trout fisherman is willing to pay the bill. In many trout waters, the question is one of having put-and-take stocking, or having no fishing at all. Of course, such stocking is justified only on heavily fished waters where a big percentage of the planted fish will be retaken by the angler.

In general, stocking with cold-water species may be expected to benefit fishing under these circumstances:

1. Stocking lakes where conditions are suitable, but where the trout have no spawning areas. Usually fingerlings may be stocked under these conditions. Many trout lakes provide good fishing only because of periodic fingerling stocking; others have adequate natural reproduction.

2. Restocking lakes with fingerlings after removal of existing fish populations by use of rotenone or by draining. The state of Washington, for example, has provided excellent trout fishing in a number of waters by this method.

3. Stocking with catchable-size trout. This is the only method of providing good trout fishing on many very heavily fished waters, either because they are not good trout waters or because they cannot raise enough fish naturally to take care of the demand. For best results the fish must usually be planted at intervals just before and during the open season. Most studies show a low winter survival of these fish.

4. Stocking with anadromous fishes. Planting of small salmon is helpful where the spawning

habitat has been destroyed by the building of dams or by other activity. Too, stocking with steelhead on the west coast has greatly improved the runs of these fish.

Introductions

Introductions have been both beneficial and harmful. For example, trout fishing has been created in many waters by introducing trout; fishing in some waters has been destroyed by introducing carp.

Often sportsmen tend to want those species introduced which are not already present. If these succeed, they must generally do so at the expense of native species. Carrying capacity is limited. If we add horses, sheep and mules to a pasture, the pasture will necessarily support fewer cows than it could support before the other species were added.

In General

Stocking isn't a cure-all. For a while its value was greatly overemphasized. It's only one of the various fish management tools. However, it is still a very important tool. Its value will depend on how intelligently the tool is used. The need for stocking should be definitely established before we stock. It should be established not by the man who raises fish, or by the sportsmen, but by competent trained fishery personnel through a study of the habitat and the fish population already present.

The American Fisheries Society's committee on hydrobiology and fish culture gave a comprehensive report on advances in these two fields at a recent meeting of the Society in Seattle. Here is one of the many important observations given in the report:

Much improvement in the use of hatcheries and hatchery products is still urgently needed. All too frequently a hatchery program is operated as a distinct and separate function of a Fish and Game Agency rather than as a branch or tool of a Fisheries Management Division. Hatchery superintendents, sportsmen, forest rangers, and many others who have no knowledge of ecol-

THE TEN COMMANDMENTS OF SAFETY

1 Treat every gun with the respect due a loaded gun. This is the first rule of gun safety.

2 Guns carried into camp or home, or when otherwise not in use, must always be unloaded, and taken down or have actions open; guns always should be carried in cases to the shooting area.

3 Always be sure barrel and action are clear of obstructions, and that you have only ammunition of the proper size for the gun you are carrying. Remove oil and grease from chamber before firing.

4 Always carry your gun so that you can control the direction of the muzzle, even if you stumble; keep the safety on until you are ready to shoot.

5 Be sure of your target before you pull the trigger; know the identifying features of the game you intend to hunt.

6 Never point a gun at anything you do not want to shoot; avoid all horseplay while handling a gun.

7 Unattended guns should be unloaded; guns and ammunition should be stored separately beyond reach of children and careless adults.

8 Never climb a tree or jump a ditch with a loaded gun; never pull a gun toward you by the muzzle.

9 Never shoot a bullet at a flat, hard surface or the surface of water; when at target practice, be sure your back-stop is adequate.

10 Avoid alcoholic drinks before or during shooting.

ogy or fish populations are given full charge of fish plantings. Fish released by such individuals frequently have less chance for survival than a palm tree in Chicago. Productive—and consequently successful — hatchery programs can be expected only where trained fishery biologists are handling planting programs and are judiciously using hatcheries as only one phase of a fisheries management program.



The True Meaning

(Continued from Page 3)

knew, by physical perception, all that they had lived for was in the tomb. Doubtless many people ridiculed them with what in modern times would be termed "wise cracks." Doubtless they were sorely worried and desperate men, and it is safe to assume that they sought some means of escape from their troubles.

What did they do? Seven of them went fishing. They were Simon Peter, Thomas, Nathaniel, the sons of Zebedee and two others. They fished all night and caught nothing, but they were close to the waters, the sky and the night. The next morning they were returning to the shore when their Master appeared to them. He was the one thing they wanted and needed most. The fulfillment of all of their hopes and desires.

So, let's go fishing. It is quite possible that we too may find in nature at least some of the things we desire, if no more than a little peace, relaxation and serenity.

Courtesy of

The Augusta Chronicle-Herald

Young flounder swim upright like other fish. When they are about an inch long, one eye moves over the top of the fish's head to nearly join the other. The fish starts to swim with the blind side down, which turns white, and the baby becomes a flat fish—Guide for Sport Fishermen.

The thinnest fish imaginable is the sundial, which resembles a fluke that has been run over by a steam roller. When held up to the light, the fish is translucent, giving rise to the nickname "Window Pane." Guide for Sport Fishermen.

GEORGIA

Game and Fish Commission

412 State Capitol

ATLANTA, GEORGIA

S. MARVIN GRIFFIN, *Governor*

The Commission is a constitutional body, responsible only to the Legislature and the Governor.

Eleven in number—one from each Congressional District—the members of the Commission are appointed by the Governor for staggered terms of seven years and the Commission in turn appoints the director.

The present Commissioners are:

COMMISSIONERS

J. O. BOWEN, 5th Dist., *Chairman*

CASON CALLAWAY, JR., 3rd Dist.

J. D. POPE, 4th Dist.

Vice-Chairman

GEORGE EAST, 6th Dist.

FRED C. JONES, JR., 9th Dist.

W. B. (BILL) AUSTIN, 7th Dist.

Secretary

ALVA J. HOPKINS, 8th Dist.

JAMES F. DARBY, JR., 1st Dist.

LUKE L. COUCH, 10th Dist.

RICHARD TIFT, 2nd Dist.

JAMES GOETHE, Coastal

ADMINISTRATIVE

FULTON LOVELL, *Director*

W. H. HODGES, Enforcement

FRED DICKSON, Fish Management

JACK CROCKFORD, Game Management

C. C. JAMES, Hatcheries

DAVID GOULD, Coastal Fisheries

W. K. CORNELISON, Information and Education

The heads of the various departments and all employees are appointed by the Director on the approval of the Commission. The Director is a bonded state official and directs the entire program, which is established, and ways and means approved for its operation, by the Board of Commissioners at regular meetings.

Game & Fish

(Continued from Page 2)

The Legislature has enacted proper laws so that this situation can be coped with. Jackson Lake, which is a Georgia Power Company impoundment, was opened to this type fishing on an experimental basis. Since no commercial fishermen existed in the State with proper experience and equipment, it was necessary to entice out-of-state fishermen. We were fortunate in securing four men who had experience on the Mississippi River and other places. They moved in and fished 6 days, taking approximately 4,500 pounds of Carp. The nearest market where these fish could be sold in large quantities was Memphis, Tennessee. Since all fish are highly perishable, it will be necessary that a local market be established. It is hoped that interested people can be contacted to establish the

proper type of industry so that we may hold to a minimum one of the greatest problems which confronts us in the fish restoration work.

From additional reports and observances by personnel of the Department, we find that pollution is increasing, and since pollution kills all types of marine life, we believe that the people are now demanding in sufficient numbers that a proper type pollution law be enacted. We know from the experiences of other States that we can have industry and at the same time have clear water in our streams and lakes. Other States that have been in worse condition than Georgia have enacted proper pollution laws so that now they still have industry in those States, along with the fresh water, which is necessary, not only to restore good fishing, but to provide good water which is necessary in the life of every other living thing, as well as for additional industry.



A FISHERMAN'S PRAYER

God grant that I may live,
to fish until my dying day.

And when it comes to my last cast,
I then most humbly pray,

When in the Lord's safe landing net,
I'm peacefully asleep,

That in His mercy I be judged,
As good enough to keep.

GEORGIA GAME AND FISH COMMISSION

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